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FOOD ENGINEERING

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Tampering

Product

danger in
ability

for manufacturers
detecting the package's contents.

Susan Garner
Congressional Int. Service
4520 East-West
Bethesda MD 20814
FE

Also:
Feeding an Aging Population
Weighing Systems

FOOD ENGINEERING



COVER STORY

The impact of a tampering incident on food firms can be devastating. The best prescription for neutralizing the damage is preparation.

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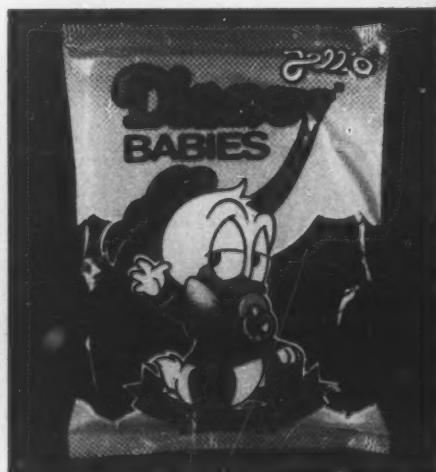
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This month's Report features the 10 award winners from the DuPont Awards for innovation in packaging. The winning designs represent important breakthroughs in packaging. The Report also discusses predictions of slightly smaller raises for non-union employees; the EEC trade war; a new packaging show debut; and food and beverage shipments for 1987.

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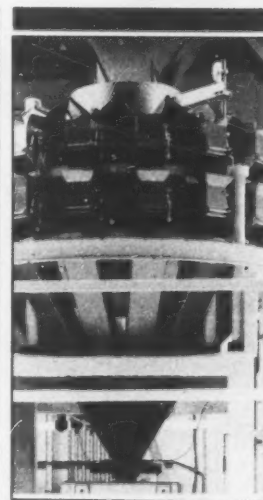
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Special Emphasis **SCALES WEIGH-IN WITH ADVANCED CONTROLS AND INTEGRATED FUNCTIONS**

Computer controls are boosting the capabilities of weighing systems.

Pages 87 to 90

Domestic food picture bright, exports gloomy for 1987

Wheat	70.8	66	58.5
Rice	4.4	4.4	4.2
Coarse grains ¹	237.7	274.4	250.8
Corn	194.9	225.2	208.9
Soybeans	50.6	57.1	54.7
Soybean meal	22.3	22.6	23.1
Soybean oil	5.2	5.3	5.4
Beef	23728	24187	22546
Pork	14807	14048	13855
Broilers	13782	14356	15263
Turkeys	2942	3211	3846
Eggs	5687.5	5703.5	5780
Milk	140.5	146.3	142.2

Source: USDA

U.S. production will be down because of acreage-reduction programs in response to large global supplies and U.S. carryover stocks. Total meat output will be lower with poultry continuing to grab a larger share.

Peering into their crystal balls at their respective "Outlook Conferences" held during December in Washington, D.C., both USDA and the Department of Commerce see improving domestic conditions for American farmers and food processors in 1987 and beyond, but the export picture remains gloomy. One basic problem: U.S. exports of both agricultural commodities and processed foods are low in added value.

U.S. agricultural exports will rise in volume but slide in value to record a modest gain in the agricultural trade balance for 1987, said USDA.

According to U.S. Department of Commerce figures, export volume—led by raw grain and cotton shipments—should edge up to about 116.5 million tons from 109.6 million tons in 1986. Value, however, will decline to \$26 billion from last year's \$26.3 billion. Major reasons for the decline in export value: Record foreign wheat and coarse-grain production, a rebound in foreign soybean harvests and the Soviet Union's best harvest in the past seven years. Lower coffee

prices will account for much of the decline in import value.

Ag outlook

Record global output will continue pressure on U.S. crop prices but net farm income will rise perhaps 10 percent due to government price-support programs and low inflation, which will help farmers keep production costs in check. U.S. production will be down because of acreage-reduction programs in response to large global supplies and U.S. carryover stocks.

Domestic demand for U.S. crops will benefit from higher livestock prices but total feed consumption will slip.

Higher cattle and hog prices will benefit livestock producers. Total meat output will be lower with poultry continuing to grab a larger share.

Milk production will drop 3 percent due mainly to the Dairy Termination Program; the decline in the number of cows is offsetting rising yields per cow. Lower feed costs will largely offset lower milk-price supports. But lower milk production combined with

U.S. Agricultural Trade Balance

(Year beginning Oct. 1) \$Billion

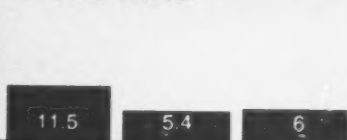
EXPORTS



IMPORTS



TRADE BALANCE



Source: USDA

Forecast

Agricultural exports will rise in volume but slide in value to record a modest gain in the nation's agricultural trade balance.

rising commercial use should result in "much lower" government purchases of surplus dairy products.

Retail food prices rose 3 percent in 1986 and USDA projects another 2 to 4 percent rise in 1987.

Processed foods outlook

According to Department of Commerce figures released Dec. 30, the value of all food and beverage shipments (SIC 20, in 1982 dollars) will rise about one percent in 1987 after a 1.4 percent gain in 1986 and average annual gains of 1.3 percent 1980-85. Labor, packaging, energy and transportation costs may increase this coming year, but flat or slightly lower commodity prices should keep costs stable for food processors.

Based on the first six months of 1986, total personal consumption expenditures (PCE) for food and beverages at home and in restaurants jumped 4.8 percent in 1986 to \$489 billion. Adjusted for price changes, total food/beverage PCE gained 2.1 percent as retail prices rose 3 percent and

(Continued on next page)

(Continued from previous page)

restaurant prices 4 percent. Meat prices—the largest consumer food-expenditure category—rose 2.5 percent; dairy prices, the next largest category, fell 0.5 percent. Canned fruit/vegetable prices fell 1.2 percent but bakery and cereal prices rose 3-5 percent.

According to the Census Bureau, food and beverage processors boosted income on minimal sales gains by cutting operating costs and expenses. Large processors reported a 5.8 percent income gain during the first quarter of 1986 vs. 1985 with only 1 percent sales increase.

Outlook for 1987

Projections for 1987 and beyond continue bright for food processors, according to U.S. Industrial Outlook-1987. Reasons: Increased disposable income; favorable consumer buying trends continued low commodity prices; more 35-55 age-group shoppers; higher after-tax profits resulting from tax reforms enacted in 1986 (with producers of value-added products gaining the most); better access to foreign markets from the General Agreement on Tariffs & Trade talks,

where food is a major topic.

As noted last month in *Food Engineering* (Jan., '87), however, the U.S. 1986 agricultural trade surplus of \$5.4 billion was offset by a processed-food trade deficit of \$5.6 billion, making the U.S. a net importer of food last year. When tobacco and cotton are backed-out of the 1986 agricultural trade surplus, the surplus falls to only

\$3.4 billion, raising the U.S. net food trade deficit to \$2.2 billion for 1986.

The Commerce Department points out that two-thirds of U.S. processed food exports in 1986 were products low in added value, while more than half the imports were high value-added. The same holds true for agricultural exports: USDA forecasts higher volume but lower value in 1987.

U.S. Food Industry Shipments (\$ millions)			
ISC		1985 ¹	1986 ¹
20	TOTAL	307,324	316,681
201	(Meat products)	66,075	67,896
202	(Dairy products)	41,639	42,550
203	(Preserved fruits, vegetables)	36,186	36,346
204	(Grain mill products)	35,078	35,754
205	(Bakery products)	21,064	22,226
206	(Sugar & confections)	18,161	18,695
207	(Fats & oils)	20,977	21,816
208	(Beverages)	42,713	44,123
209	(Misc. foods) ²	25,434	27,169

¹Estimated

²Sealoods, coffee, pasta, prepared foods not elsewhere covered

Source: U.S. Industrial Outlook - 1987

U.S. Dept. of Commerce

The value of all food and beverage shipments (in 1982 dollars) will rise about 1 percent in 1987 after a 1.4 percent gain in 1986 and average gains of 1.3 percent 1980-85.

Trade war with the EEC could affect \$billions in trade

Will there be no more Danish ham or French wine or English gin? Will we ship no more meat or grain or fruit to Europe? That's a distinct possibility as tension over a possible trade war with the European Economic Community increases.

The conflict dates from a year ago, when Spain joined the Common Market and had to adopt its blatantly protectionist tariffs on agricultural imports. According to Washington's calculations, the move cost American farmers \$400 million a year in grain exports. Unless Europe offsets the loss by easing its barriers to other American products, the Administration proposes punitive tariffs on \$400 million of European products sold in the U.S., mainly British gin, French brandy, Dutch cheese, cheap wine from West Germany, and olives from the Mediterranean countries.

Not satisfied with European conces-

sions offered to date, the Administration, as of this writing had set the 200% tariffs to take effect January 31.

The heart of the problem lies in an increasing trade deficit with the EEC. According to the latest U.S. Dept. of Commerce figures, the U.S. balance of trade with the European Community has gone from a plus 18% in 1981 to a minus 34% in 1985. For food products, the numbers reflect a halving of exports and a doubling of imports since 1981. The U.S. points to the protectionist policies of the EEC as the reason for the problem, and with farmers and industry in an uproar, is seeking to remedy the situation.

A trade war would aggravate an already bad trade situation. Even if an agreement is reached in the current dispute, it won't alleviate the overall situation. Farm subsidies on both sides of the Atlantic create huge surpluses that translate directly into

curbs on farm imports.

Despite the fall in the dollar, the U.S. trade deficit in 1986 is estimated to have hit an all-time high of more than \$170 billion, up from \$148.5 billion in 1985. That translates into lost jobs, lost income and threats to the survival of farmers and industries.

In order to achieve the modest 3.2 percent growth for real GNP, forecast by the Administration, the Government is counting on a \$30 billion to \$40 billion reduction in the trade deficit this year. If that does not materialize, there is risk of recession, higher unemployment and an even deeper budget deficit.

The fracas with the EEC is only the tip of the iceberg. The Administration can not afford to back down, for fear that Congress will react by passing extreme protectionist legislation, which could push the country deeper into a downward spiral. In that case, any company that exports goods or commodities, or imports ingredients or machinery is likely to be affected.

INDUSTRY REPORT

COMPANIES
EVENTS
WASHINGTON

Winners announced for the first Du Pont Awards competition

Ten new developments representing important breakthroughs from throughout the food industry have been named as winners of the first *Du Pont Awards* competition for food industry innovation. Du Pont Company's Packaging Products Division sponsored the competition in cooperation with the National Food Processors Association. The winners were announced January 27 at the NFPA's annual meeting in Chicago.

According to Wilmer A. Jenkins, director of the Packaging Products Division, "All of the winners are industry firsts and represent significant accomplishments. A number of the developments will change marketing of foods in their product categories. Selected from among an outstanding field of entries, they are the leading

edge of change in the food industry."

Competition winners encompass exciting new developments, made possible by the capabilities of plastic packaging, from areas as diverse as grocery retailing, food processing equipment, packaging fabrication, food product formulation and food packaging structures.

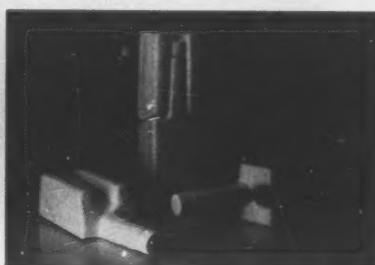
Established to recognize new developments from throughout the food industry that expand the use of plastics in packaging, the *Du Pont Awards* competition is unique in its scope, being the first such competition to invite participation from throughout the food industry. Entries came from food companies, food retailers, makers of processing or packaging equipment, packaging fabricators and materials suppliers, as well as devel-



Above: FMC Corporation—"Universal Sterilizer."—This sterilizing equipment enables processors to retort products in various plastic container with throughputs competitive with metal and glass, in varying process times and temperatures.



Above: Courtesy Mold and Tool Corp.—"Shear-Pak Tamper Evident Containers."—Providing molded-in tamper evidence in an easy-open, reclosable, easy-dispensing container, the concept is extendable to many types of food products.



Above: Universal Symetrics Corp.—"Pac Mate Container Systems."—The twin-pack system capitalizes on the design flexibility of plastics. Interlocking feature encourages multi-unit sales by focusing consumers on multiple purchases.

Below: Ocean Spray Cranberries, Inc.—"Flexi-Light, Bell-Shaped Designed Bottles."—Monsanto Co.—"OPET Bottles."—Clear, hermetically-sealed, non-breakable and lightweight,—first hot-fillable plastic container marketed in the U.S.



Below: Campbell Soup Co.—"Cookbook Classics microwaveable soups."—Continental Can Co.—"Menu Box retortable soup bowls." Reynolds Metals—"Container Mate Closures."—Developed a microwaveable container to market soup.



Below: The Kroger Co.—"Fresh, Fully-Cooked Meats."—Aimed at consumer convenience, Kroger is marketing fresh, restaurant-quality, pre-packaged, fully-cooked meats in the fresh meat case, in a microwaveable package.

opers of new packaging and food marketing concepts.

Judges for the competition included executives from the food and packaging industries, industry suppliers, educators and trade press editors.

Presentations of the awards to the winners by Du Pont Company Vice Chairman Edgar S. Woolard, will be a highlight of the Du Pont Packaging Forum, to be held in New York City, February 24.

According to Du Pont, the *Awards* are designed to encourage and accelerate developments in the food industry that advance the use of plastics in packaging by identifying the most innovative and useful approaches.

Among the eligibility requirements is the stipulation that plastic materials must be an essential component to the final product package. However, entries may involve innovations from other parts of the food industry.



Above: American Can Co.—“Omni Containers.”—Geo. A. Hormel & Co.—“Q-Pak 211 Containers.”—The first retortable plastic can to duplicate the functionality of the metal can, these containers incorporate a dessicant with the barrier layer.

Below: Sanford Redmond Inc.—“dispenserpak single portion dispensing system.”—The single-portion package for liquids and viscous food products is easily opened with one hand and permits controlled dispensing of the product.



Eligibility is intentionally broad to encourage all involved in the food industry to consider how innovations in their disciplines could make the use of plastics in food processing and packaging possible or more productive.

According to Du Pont, fundamental changes are taking place in food products and their packaging. New options in food preparation methods, container shapes and sizes, and new plastic packaging materials have led to unprecedented levels of new product development and introduction. By the year 2000, Du Pont expects fundamental shifts from metal and glass to high barrier plastics, increasing plastics' share to nearly half of a \$44 billion primary food packaging market.

It would appear from the award winners (listed below), that Du Pont has achieved its goal of recognition of varied innovative uses that expand the role of plastics in food packaging.



Above: Cullnova Group, (Division of General Foods)—“Cullnova refrigerated entrees.”—These refrigerated, prepared gourmet entrees utilize modified atmosphere packaging to create a new supermarket category.

Below: Campbell Soup—“Swanson Frozen Dinners.”—Signode—“All OvenWare Trays.”—Goodyear Tire & Rubber—“Cleartuf Resins.”—Controlled crystallization of polyester allows economical production of microwaveable CPET trays.



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INDUSTRY REPORT

COMPANIES
EVENTS
WASHINGTON

Food and beverage shipments to rise 1% in 1987, says Commerce Dept.

Food Industry Shipments

(\$millions - current)

Industry	1972	1977	1984	1985E	1986E
Meat Products	31,477	46,276	68,579	66,075	67,898
Dairy Products	16,312	26,011	40,402	41,639	42,550
Pres. Fruits & Veg.	11,480	20,333	34,058	36,186	36,348
Grain Mill Products	12,163	22,345	34,377	35,078	35,754
Bakery Products	7,896	12,236	19,387	21,064	22,226
Sugar & Confections	6,622	10,840	17,428	18,161	18,695
Fats & Oils	6,901	14,480	19,551	20,977	21,918
Beverages	13,869	23,329	41,181	42,713	44,123
Miscellaneous	8,335	17,064	25,053	25,434	27,169
Total Food	115,055	192,914	300,016	307,324	316,681
E = Estimate					

Food industry shipments have leveled off over the past few years, with an expected rise of only one percent projected by the Department of Commerce for 1987.

Based on 1982 dollars, the Government expects the value of food and beverage shipments to rise by about 1% in 1987, according to figures in the 1987 U.S. Industrial Outlook. This compares with a 1.4% gain in 1986 and 1.3% yearly increases from 1980 through 1985.

The report sees food manufacturers gaining from higher disposable incomes, favorable consumer buying trends and low commodity prices. The report also cites increases in the 35-55 age group that has "highest propensity to spend on food."

The report shows consumer food and beverage spending up 4.8% in 1986. At-home consumption accounted for \$328 billion, a 4.1% increase. Restaurant spending was \$152 billion, a 6.6% increase. Retail prices for food and beverages consumed at home rose 3%, and at restaurants, 4%. Prices for meat rose 2.5%, bakery/cereal, 3-5%. Dairy prices fell 0.5% and canned fruits/vegetables, 1.2%.

The Commerce Department has taken a positive view of the more than fifty food and beverage mergers since 1984. The report says that acquisitions make this sector of the economy "more concentrated and more efficient." While mergers may reduce the total number of manufacturers, "inter-firm competition still remains keen, to the consumer's benefit," adds the Department.

For predictions through 1991, the '87 Industrial Outlook calls for poul-

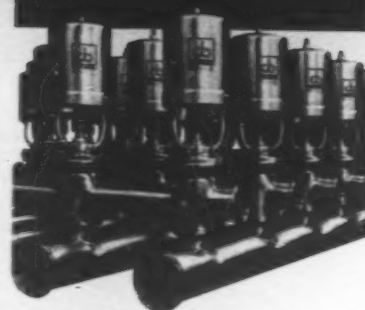
try to continue outpacing red meat throughout the period. Most growth in processed fruits and vegetables will come from specialties, with aseptic juices up 50% and frozen entrees up 25%. In the dairy category, Italian cheeses will lead shipments up 0.5% yearly. Baked goods will grow 1.3% per year, as the decline by white bread halts. Breakfast cereals will gain at a 3.3% annual rate with manufacturers aiming to penetrate an older market more effectively.

Pay increases to range 5.25% to 6.25% in '87

That's what nonunionized employees can expect for pay increases in 1987, according to a survey conducted by *Business & Legal Reports*. This is in comparison to 5.5% to 6.4% in 1986, and 6.0% to 7.1% for 1985. According to BLR, the steady downward trend (hopefully) reflects the end of the inflationary '70s.

The results are from BLR's third annual survey of projected pay increases. The company asked employers to provide the percent increase budgeted for merit and general increases, as well as rate range adjustments. The period covered is January through December of the coming year. A total of 698 firms contributed data to the survey. Of these, 29% had less than 100 employees, 43% had 100 to 499 employees, and 28% had over 500 employees.

(Continued on page 27)



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INDUSTRY REPORT

COMPANIES EVENTS WASHINGTON

(Continued from page 25)

The survey also showed that union workers can expect a much lower pay increase next year. BLR projects an increase of 4.6% for unionized employees in '87.

Nutri-Cheese Co. goes public

Nutri-Cheese Co., a manufacturer of Feta, Grated Parmesan and Casa Blanca cheese substitutes founded two years ago (*FE* Mar., '86), went public in Oct., 1986, with a \$2.6 million over-the-counter stock offering. According to the prospectus, part of the proceeds will be applied to purchase and renovate a 25,000 sq.-ft. building in Oak Park, IL, as the company's new plant.

Nutri-Cheese analog cheese products, available to the ingredient and food-service markets, are based on skim milk and vegetable oils and contain no animal fats, cholesterol or lactose yet taste like the real thing, according to co-founder and CEO Dr. Larry G. Siapantas.

Siapantas, also president of the consulting firm Cheese Foods International (Elk Grove Village, IL), had earlier founded Cheese-Tek Corp., a manufacturer of imitation cheeses sold to Borden in 1979.

FSIS is planning to implement DI

Industry trade association representatives, including Lloyd Hontz of NFPA, have met with FSIS Administrator Donald Houston and members of his staff to discuss current FSIS plans to implement discretionary inspection (DI) in meat and poultry processing establishments as recently authorized by Congress.

According to NFPA, FSIS intends to conduct pilot testing of discretionary inspection as it proceeds to develop regulations. Pilot testing is beginning in the first quarter of 1987 and FSIS expects to publish proposed regulations before the end of 1987.

Greater inspection?

Discretionary inspection permits effective use of inspection resources and does not automatically mean reduced inspection, agency representatives stressed. In fact, many establishments who can not or will not take

responsibility for assuring the safety of their operations and compliance with regulatory requirements will find themselves subjected to greater rather than lesser inspection. The goal of DI will be equal assurance of regulatory compliance.

FSIS reported that the pilot program will be started in early 1987 in an undetermined number of plants. FSIS is planning to conduct the pilot programs only in those plants with good processing records. However, it was suggested at the meeting that the results might be more useful if the pilot included a cross section of plants. Experience gained in the pilot test will be factored into the regulations. The goal is to have DI in place nationwide by January, 1988.

SouthPack to debut in Atlanta this May

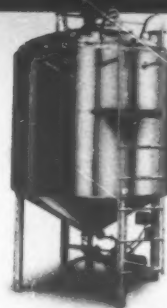
SouthPack, the Southern Packaging Exposition, the first major packaging event to be held in the expanding Southern market will take place at the Georgia World Congress Center in Atlanta, May 13-15, 1987.

More than 200 companies will participate as exhibitors at the exposition, produced by the Canners Exposition Group. In conjunction with the exposition, the Southeast Region of the Society of Packaging and Handling Engineers will sponsor a two-day professional development conference, May 13 and 14. Conference topics will be directed specifically to the needs of packaging professionals working in the Southeast.

ConAgra to phase out two plant operations

The Carrolton, MO and Fairmont, MN prepared frozen foods processing plants of ConAgra Frozen Foods are scheduled to be shut down this spring. The decision to close was made following a comprehensive internal study of the company's future business, resulting in a reorganization of production with geographic considerations.

ConAgra Frozen Foods officials indicated that these closings will allow the company to maximize the efficiency of its entire operation, including the most recently acquired Del Monte frozen food business, and will strengthen the company's leadership position in the frozen food industry.



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AGING POPULATION



MEETING THE NEEDS OF AN AGING MARKET

Are the growing ranks of the elderly really a new and different market segment, with special needs that must be met, or are they just ordinary consumers with gray hair?

KEVIN J. HANNIGAN
Features Editor

Just as Baby Boomers and Yuppies were a hot market, the new "hot" market is the 50-Plus age group. Right now, this fastest-growing of all age segments comprises about 25% of the population but controls nearly 50% of the disposable income.

In the next 15 years, says one recent study, the number of people over 50 will increase by 23%—compared to a 14% increase in the total number of adults in the U.S. population. By the year 2000, 76 million Americans will be 50 or older.

As a group, these oldsters spend about \$800 billion each year. And, as a group, their affluence will grow as their numbers

increase. The question puzzling many food marketers is how to serve this growing market. Do you develop products aimed at their specific wants and needs, as perceived by market research, or do you concentrate on making today's foods more convenient?

How do you reach this market?

Today, the U.S. marketplace includes the very young, the very old and a massive number of "Mature Adults." In a real sense, the marketplace is representative of the traditional nuclear family. And food firms are marketing to that Family of Man.

Simply put, the food industry does not market to "The Elderly"—at the moment. It develops products to meet common needs and desires of many age groups. But, since there are so many more elderly today, and more coming tomorrow, they must be considered when marketing a new product.

For the past 25 years, food marketers have concentrated on matching the product and the packaging to the market. And, by and large, the elderly in the U.S. are happy with the products now available. The only real complaints have been about the packaging and preparation of the food items, and these concerns also have been met.

With the elderly, problems tend to be more sharply focused. Easy opening takes on greater meaning when you have arthritis, for instance, and lightweight packaging is more appreciated. So is single-serving convenience, which eliminates wasted food and money. Microwave ovens, used to re-heat leftovers, are a boon to anyone living alone. They can buy single-serve items at a fast-food shop and freeze for use later.

It's no accident that today's convenience products are available. The food industry as a whole keeps close track of changes in lifestyle and adapts to those changes. As families became smaller, for example, so did package sizes. And, as the number of single-person households increased, food companies developed single-serve packaging.

An example of how closely processors follow the market is the new *Pet-Ritz 6-inch Frozen Pie Shells*. The smaller shell is perfectly suited for 1-2 people. And it's quick to fix, too. Total preparation and baking time for 6-inch pies is usually less than one hour.

That's the story of most new products introduced in the past 25 years. To make products more convenient, easy-open devices and easier-to-dispose materials were brought into play. And heavy glass bottles for milk and juice have been replaced by lightweight plastic, making large sizes easier to carry and reducing the number of

trips a consumer has to make to the store.

At retail, many food chains cater to the elderly because they do most of the shopping. In Philadelphia, Acme Markets provides cab service to help oldsters get home with the groceries. Since they don't have to carry the bags or ride a bus, these older customers tend to buy more. And, in Florida, Publix Super Markets provides benches in front of their stores, as well as rest rooms. Publix even tells its clerks to pack two light bags instead of one heavy one. This sort of thoughtfulness brings customers back.

How large is the elderly market?

According to figures provided by BASF Wyandotte's Nutritional Information Bureau, there are about 27 million Americans over 65 years old today; and there will be almost 35 million by the year 2000. Today, there are more than two million aged 85 and older. There will be nearly five million in the year 2000. Also, by the year 2000, there will be nearly 37% more people of retirement age. Yet, the total population will increase by only 18.2%. And the 35-54 age group will increase by about 65%.

The total market will grow, too. By 1990, the U.S. population is predicted to reach 248.3 million. And 31% of that number will be over 45, compared to about 30% in 1980. The median age of the total U.S. population will be 33.2 years. And the median age of just the adults will be 41.6 years.

How do you prepare for this older market? If they have special wants and needs that must be met, what are they? A large number of medical experts say that these needs are related to health and nutrition, and that new products should be developed to help oldsters retain good health. But are these valid reasons to zero in on the elderly?

A matter of taste

As many have suggested, there is considerable interest in the "failing" senses of the elderly—particularly in the sense of taste. It may present a problem in flavoring foods for old people. Thus, FEMA has funded research to find out whether foods intended for the elderly should have intensified flavors. And there are many similar projects going on around the U.S. Much of this research is based on the premise that your taste buds die before you do, probably from overuse. And yet most old people would probably dispute this claim.

It is probably a fact that people older than 50 like stronger flavors than people under 50. It's also a fact that, in the 1950s, food processors decided to make bland foods so

The Boomer Bulge Reaches Middle Age

Age in Years	0-34	35-44	45-54	55-64	65-Plus
U.S. Census 1980	57.9	11.3%	10.1%	9.6%	11.3%
Estimated 1985	55.4	13.3	9.6	9.5	12.2
Projected 1990	52.9	15.0	10.3	8.8	13.1
* and 2000	47.9	16.3	13.8	8.7	9.5
1980-1985	-4.5%	+2.0%	-0.5%	-0.1%	+0.9%
* 1985-2000	-12.0%	+2.3%	+3.7%	-0.7%	-2.7%

SOURCE: Chilton Research, U.S. Census Bureau, and *Food Engineering

Both Age and Composition of U.S. Market is Changing

	Total Population	Median Age	White	Black	Other
1980 Census	226,545,805	29.9 Yrs.	83.1%	11.7%	5.2%
Estimated 1985	237,368,566	31.6	82.7	11.9	5.4
Projected 1990	248,311,126	33.2	82.3	12.1	5.6
* and 2000	267,955,000	36.4	81.4	12.5	6.1
1980-1985	+4.8%	+0.3 Yrs.	-0.4%	+0.2%	+0.2%
* 1985-2000	+8.2%	+4.8 Yrs.	-1.7%	+0.6%	+0.5%

SOURCE: Chilton Research, U.S. Census Bureau, and *Food Engineering

that they could market in a wider geographic area. Before that, foods were likely to be flavored to the taste of a particular region. But, when nationwide distribution became desirable, it was discovered that a popular flavor in one region was unlikely in another. So, processed foods became bland. And nearly everyone below the age of 40 was raised on these bland foods.

Furthermore, when it comes to tasting food flavors, some older people are superior to their juniors. It takes years to develop a palate for wine tasting, for example, which is why most wine experts are not children. And the older folks are likely to be more discriminating about what they eat. They may like foods that young researchers reject simply because they can taste the flavor.

Early taste studies, in which a number of old people were contrasted with a number of young people, may fail as scientific studies on two counts: none of the panelists were trained tasters, and neither could be consid-

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Like a bump in the population curve, the Baby Boom Generation both follows and precedes a period of very low birthrate. (TOP)

As the U.S. market grows older, it's also changing in other ways. This shift in complexion also will affect the market.

The ultimate convenience pack, Campbell's Cookbook Classics soup bowl, has been honored as one of the best in the world.



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ered a control group. "Maybe kids have lost their sense of taste from eating junk food," cracks an oldtimer, "just like they've lost their hearing from listening to rock music."

Likening the sense of taste to the sense of hearing is probably a mistake. According to the Monell Chemical Senses Center in Philadelphia, a decrease in the total number of taste buds doesn't necessarily indicate a problem with the sensation of taste. That's because you don't use all of your taste buds when you eat, just as you don't use all of your brain cells when thinking. In most people, the decline in the total number of taste buds alone would not justify a special product line for the elderly.

Finally, a dentist points out that most older people wear dentures, which cover the roof of the mouth—and many taste buds—almost completely. That could account for some loss of taste sensation in the elderly.

An "elderly" product line

Older Americans might be healthier if they had product choices, and even an entire food line, that matched their changed dietary needs, suggests a Penn State food scientist. But, before a food line is feasible, research on the differing dietary needs of the elderly must be conducted.

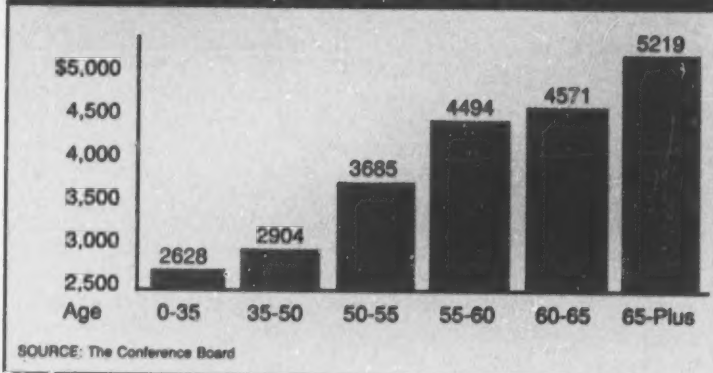
"Unfortunately, very few detailed studies have been carried out on the elderly, and the existing knowledge has been taken from diet recall studies and extrapolated primarily from younger adults," says Dr. Manfred Kroger, a regional communicator for the Institute of Food Technologists. "It is high time that this country paid attention to the wide diversity in the nutritional needs of the elderly," he says, adding that the more than 25 million Americans over 65 are often overlooked in setting nutritional standards.

One stumbling block to developing nutritional standards is that the elderly's requirements are not consistent, explains Kroger. "As a group, the elderly are much less uniform in their health status than are younger persons." Their problems could be related to physiological decline, low economic status, limited food consumption, disease processes and the regimens prescribed to cure or treat illnesses.

However, despite the lack of attention to the needs of the elderly, there are several known guidelines for food for older Americans. "Products should have decreased calories, less fat and more nutrients," Kroger says. Foods should also be easy to prepare by those partially disabled, and the labels should be easy to read.

"Elderly tend to avoid foods that do not

Discretionary Income Rises With Age



have taste appeal or that are difficult to chew," the food scientist adds. "They also tend to eat less as their appetites decline as a result of reduced physical activity, physiological changes, or drug and medication effects." Appropriate portion control by packaging would be the answer. "After all, there are super family sizes," he said.

Besides declines in digestive organ activities needed to extract nutrients from foods, other changes diminish the desire for foods, Kroger says. The senses of taste, smell and vision play an extremely important appetite role in elderly appetites. "The inability of the aging eye to adapt easily from bright light to dim light or to focus clearly can hinder food shopping, selection and meal preparation," he says. And a restaurant does not necessarily offer the solution. Many older persons are reluctant to eat in restaurants because they can't read the menus.

Kroger endorses the idea of a food product line to cater to the nutritional needs of the elderly. "One that satisfied the needs of the elderly would meet the nutritional needs of the whole population," he says. "This entire concept ought to be examined, since our

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Because older adults tend to be settled in smaller households, which are already paid for, their monthly bills should be less.

Present trends indicate that, in 1990, our large population will have roughly the same percentages of males and females as today.

Composition by Sex to Remain Stable

	Male	% of Total	Female	% of Total
U.S. Census 1980	110,053,161	48.6%	116,492,644	51.4%
Estimated 1985	115,192,076	48.5	122,175,139	51.5
Projected 1990	120,448,376	48.5	127,861,368	51.5
Net Change 1980-1990	+9.1%	-0.1%	+9.1%	+0.1%

SOURCE: Chilton Research, U.S. Census Bureau

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1980-2000 — How the Market Can Change in One Generation

Age Group	Change 1980-2000
Total	
Population	+18.2%
0-34	-1.9
35-44	+70.6
45-54	+62.8
55-64	+9.5
65-Plus	+36.7

SOURCE: The Conference Board

As the Baby Boomers reach middle age, the number of "Mature Adults" in the marketplace will increase by two-thirds.

Today, as a group, older people spend about \$800 billion annually for goods and services. That will increase as their numbers grow.

most pronounced demographic trend is toward a larger elderly population."

What is aging, anyway?

Aging is that process in the human experience beyond maturation in which the body begins to fail. It is a physical experience, and not a mental one. By contrast, "getting old" is a state of mind. Most older people feel younger than they are. For that reason, nobody buys foods developed for old people, not even old people. Typically, older consumers have strong brand preferences.

Concern for the health of these older citizens is natural. And nutrition is a key factor in maintaining health. But can physical problems be treated by dietary means? Do elderly persons have special nutritional needs and, if so, what are they?

Altering food products to meet the nutritional needs of the elderly is unlikely because we don't know what those needs are. According to Dr. Myron Winick, M.D., editor of Columbia University's *Nutrition and Health*, "Today, there is not a single nutrient for which there is a recommended dietary allowance (RDA) for men and women 65 and older. Worse, there's no data base on which to formulate recommendations."

Scientists in nutrition and gerontology are working hard to fill this information gap. At Tufts University, for instance, the USDA has established the Human Nutrition Research Center on Aging. Among the center's many projects is a survey of more than a thousand people ranging in age from 60 to over 100 years. These people are relatively healthy and free from disease, with some 300 of them living in nursing homes. As study volunteers, they supply information on what they eat and what nutrition

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A Moving "Bump" in the Population Curve

Every marketer's dream is a clearly defined target market that is very large and has money to spend. Through most of the past 20 years, that was the "Baby Boomers." Most recently known as "Yuppies," the "Boomer" demographic bulge has been the darling of the marketing world for over a generation.

This moving "bump" in the population curve represents both a normal birth rate for the 1945-57 period and those births which had been postponed by the Depression and World War II. Births during this period rose sharply in 1945 and began to decline in 1967. Until recently, that decline had continued. Now, however, it appears that the birth rate may rise again to approach a "normal" level.

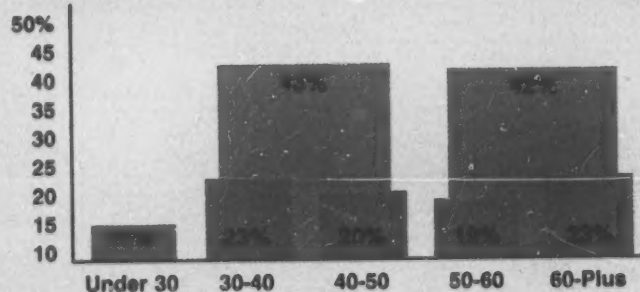
Because of the lower-than-normal birthrate before and after the "Population Explosion," the segment aged 35-64 years now represents nearly 25% of the total U.S. population. More importantly, since it is a clearly defined group, it divides the total marketplace into three well-defined segments—the Youth, Mature and Elderly markets.

Most new food products and packages introduced during the past 20 years have been aimed at this large, central market segment. There was a surge in baby foods and "kid" products through the 1960s, and an emphasis on teenagers and young adults in the 1970s. Now, to keep up with these "Mature Adults," fast-food chains have become restaurants and frozen dinners have become gourmet meals.

Today's marketing strategy is to serve the total market, while still keeping in mind the special needs of the three basic segments. Of course, the "Mature Adult" segment will continue to be the focal point for advertising and product development. And today that segment has entered its middle years, suggesting that there will soon be a greater interest in developing foods for the elderly.

This segment has proven that it is willing to try something new, pay for quality, and desires greater convenience. Most importantly, the group that falls roughly between the ages of 25 and 60 does most of the shopping.

Disposable Income, Distribution by Age



SOURCE: The Conference Board

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supplements they take, and they're carefully examined for nutrient deficiencies.

What has been learned so far? "As people get older," says Robert B. McGandy, M.D., a professor of nutrition associated with the center, "they need fewer and fewer calories. Of course, as calories are reduced, so are all the other nutrients. So, by younger people's standards, all of the nutrients are lower. We're not seeing real deficiency conditions, such as scurvy and beriberi. But, in many cases, nutrient intakes would fall in the range of borderline or suboptimal."

"In view of lowered caloric intake with its lowered nutrient levels, and possibility of decreased absorption," says Dr. McGandy, "an RDA-level vitamin and/or mineral supplement would put even the lowest-calorie diet well into the range of nutrient adequacy. Assuming, of course, that today's RDA standards are appropriate for the elderly."

There is a basic problem, however. "All we know about nutrition and chronic diseases, and anything we know about cancer,

has been derived mainly from studies of middle-aged people. So, who knows how important these factors are for the elderly?"

Supporting this view, a report from the Human Nutrition Center on Aging in Boston indicates that most older Americans take good care of themselves despite their waning appetites. A survey of nearly 700 healthy Boston-area residents over 60 showed that their blood levels of essential vitamins and minerals were within normal ranges, although they consumed 200 to 400 fewer calories a day than middle-aged people. The adequate nutritional levels were due to wise dietary choices and the use of vitamin/mineral supplements by 50% of those surveyed. The Boston study is the first to establish norms for healthy middle-class people throughout the aging process.

Dr. McGandy favors a curbing of zeal in prescribing preventive or restrictive diets for the very old, especially those in nursing homes. "Where food is probably the last happy thing left in life, to be put on a low-sodium or low-fat and -cholesterol diet, or a diabetic diet, really just about takes away all that's left. And putting restrictions on somebody who barely eats anything at all isn't reasonable. One has to take up the social, psychological and emotional factors."

The consensus of all researchers, therefore, seems to be that the elderly deserve food products that they can enjoy—not "hospital" food to solve a medical need. A careful choice of food products now available, plus vitamin and mineral supplements, should be enough to keep the older members of the population happy and healthy.

The food industry in the past 50 years has performed a major miracle in upgrading the health of the entire U.S. population. In part, it was accomplished by fortifying food products with vitamins and minerals. And a major part was educating the public to the importance of a balanced diet. Given the diverse views of food and medical researchers, it appears that the industry should continue to do what it has done so well in the past.

Elderly consumers must be considered, of course, but as a part of the larger market—not as a "problem" group. The solution may be to form a taste panel of elderly people, to give an opinion on the tastes of certain foods. This trained panel could give some indication of the loss of taste sensations overall and in the different parts of the mouth, since each type of taste is expressed in a different oral area. In this way, the needs of the elderly could be met without segmenting them as a "Geriatric" market.

Though the total population will swell, and women will still have a slight edge in longevity, neither sex will control the market.

Age/Population Distribution by Sex

	Census 1980	Estimated 1985	Projected 1990
Male			
0-34	20.7	20.7	20.7
35-54	21.4	21.4	21.4
55-Plus	57.9	57.9	57.9
Female			
0-34	22.7	22.7	22.7
35-54	21.2	21.2	21.2
55-Plus	56.1	56.1	56.1
Total Population			
0-34	21.7	21.7	21.7
35-54	21.3	21.3	21.3
55-Plus	57.0	57.0	57.0

SOURCE: Chilton Research, U.S. Census Bureau